

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE DIVISIONAL APPLICATION

OF: SCHROF ET AL.

GROUP ART UNIT: 1762

SERIAL No. (TO BE ASSIGNED)

EXAMINER:  
BERNARD D. PIANALTO

FILED: HEREWITH

FOR: METHOD AND MEANS OF PRODUCING CURED COATING FILMS

Honorable Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

This is a Divisional application of Application Serial No. 09/433,547, filed on November 04, 1999.

The Divisional application is drawn to non-elected subject matter that was canceled from the claims during the prosecution of the parent application. Kindly amend the Divisional application for further prosecution as follows:

IN THE CLAIMS:

Amend the claims to read as set forth in Appendix I attached to this paper. A marked up version indicating the changes with regard to the claims as appended to the application is found in the attached Appendix II.

IN THE SPECIFICATION:

Amend the specification as set forth in Appendix III attached to this paper. A marked up version indicating changes which were made in paragraphs of the application is found in Appendix IV.

REMARKS

Claims 10, 11 and 13 to 15 as set forth in Appendix I of this paper are now pending in this case. Claims 1 to 9 and 12 have been canceled, Claims 10 and 11 have been amended, and Claims 13 to 15 have been added as indicated in Appendix II.

The claims have been amended to avoid overlap with the claims in the parent case. Also, the claim language has been revised to better conform with U.S. formal requirements. New Claims 13 to 15 have been added to cover the embodiments of the means defined in Claim 10 which were deleted.

The specification has been amended in order to include the proper reference to the parent case pursuant to 35 U.S.C. §120. Additionally, an obvious error in the first paragraph of page 6 of the application has been corrected. The dimension of the particles referenced in the respective paragraph has been corrected in accordance with the disclosure of the priority application page 7, indicated lines 2 and 3. As evidenced by the certified copy of the priority application, the character "μ" was inadvertently omitted when the application was translated into the English language. No new matter has been added. Favorable action by the Examiner is respectfully solicited.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11.0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

KEIL & WEINKAUF



Herbert B. Keil

Reg. No. 18,967

1101 Connecticut Ave, N.W.  
Washington, D.C. 20036  
(202) 659-0100

Encl.: THE AMENDED CLAIMS (Appendix I)  
THE CHANGES IN THE CLAIMS (Appendix II)  
SUBSTITUTE SECTIONS OF THE SPECIFICATION (Appendix III)  
THE CHANGES IN THE SPECIFICATION (Appendix IV)

HBK/BAS

A P P E N D I X I:

THE AMENDED CLAIMS:

10. (*amended*) A means of producing at least one coating film on at least one area of a substrate surface, having at least the following elements:
- a) at least one storage container for at least one reactive coating formulation,
  - b) at least one exposure unit, and
  - c) at least one application unit having a nozzle, and/or
  - d) a bell for electrostatic application (ESTA bell),
- wherein said at least one exposure unit is designed so that radiation generated in said at least one exposure unit is brought into contact with said at least one reactive coating formulation in said at least one application unit.
11. (*amended*) The means defined in claim 10, further comprising at least one optical waveguide which brings the radiation into contact with said at least one reactive coating formulation in said at least one application unit.
13. (*new*) The means defined in claim 10, wherein the exposure unit is a UV exposure unit.
14. (*new*) The means defined in claim 10, wherein the exposure unit is a UV laser.
15. (*new*) The means defined in claim 10, wherein the application unit is a spraying head.

A P P E N D I X II:

THE CHANGES TO THE CLAIMS:

Claims 1 to 9 have been canceled. Claims 10 and 11 have been amended as indicated in the following:

10. (*amended*) A means of producing at least one coating film on at least one area of a substrate surface, having at least the following elements:

- a) at least one storage container for at least one reactive coating formulation,
- b) at least one exposure unit, [~~preferably a UV exposure unit, more preferably a UV laser,~~] and
- c) at least one application unit having a nozzle, [~~in particular a spraying head,~~] and/or
- d) a bell for electrostatic application (ESTA bell),

wherein said at least one exposure unit is designed so that ~~[the]~~ radiation generated in said at least one exposure unit is brought into contact with said at least one reactive coating formulation in said at least one application unit.

11. (*amended*) [A] The means [as claimed] defined in claim 10, [wherein] further comprising at least one optical waveguide [is used in order to bring] which brings the [light generated in said at least one exposure unit] radiation into contact with said at least one reactive coating formulation in said at least one application unit.

Claim 12 has been canceled. New Claims 13 to 15 have been added as follows:

13. (*new*) The means defined in claim 10, wherein the exposure unit is a UV exposure unit.

14. (*new*) The means defined in claim 10, wherein the exposure unit is a UV laser.

15. (*new*) The means defined in claim 10, wherein the application unit is a spraying head.

A P P E N D I X III:

SUBSTITUTE SECTIONS OF THE SPECIFICATION:

On page 1:

- After the title and prior to the first paragraph, ie. at indicated line 10, insert the following new paragraph:

This is a Divisional application of Application Serial No. 09/433,547, filed on November 04, 1999, (allowed).

On page 6:

- Delete the paragraph beginning in indicated line 1 and ending in indicated line 14 and insert in its stead:

With further preference, the crosslinking reaction is delayed by means of a spatial separation of photoinitiators and the reactive coating formulation constituents to be crosslinked, such as, for example, reactive monomers and prepolymers. This is preferably accomplished by nanostructuring of the coating formulation. Preferably, for example, the photoinitiators contained in the coating formulation are embedded in particles. These particles preferably have a diameter in the nm to  $\mu\text{m}$  range, with particular preference in the range from 10 nm to 100  $\mu\text{m}$ . Accordingly, the crosslinking reaction can be slowed down by the time it takes for the photoinitiators or their cleavage products to diffuse out of the particles. In another preferred embodiment, the photoinitiators are not only embedded in particles but also fixed in lattices or dendrimers. The delay of time of the crosslinking reaction that is achieved by this means corresponds, then, to the time it takes the reactive constituents of the coating formulation, such as reactive monomers or oligomers, for example, to diffuse into the lattices.

## APPENDIX IV:

### THE CHANGES IN THE SPECIFICATION:

On page 1:

- A cross reference to the parent application in accordance with Section 120 has been added after the title and prior to the first paragraph, ie. at indicated line 10.

On page 6:

- The paragraph beginning in indicated line 1 and ending in indicated line 14 has been amended as indicated in the following:

With further preference, the crosslinking reaction is delayed by means of a spatial separation of photoinitiators and the reactive coating formulation constituents to be crosslinked, such as, for example, reactive monomers and prepolymers. This is preferably accomplished by nanostructuring of the coating formulation. Preferably, for example, the photoinitiators contained in the coating formulation are embedded in particles. These particles preferably have a diameter in the nm to  $\mu\text{m}$  range, with particular preference in the range from 10 nm to 100  $\mu\text{m}$ . Accordingly, the crosslinking reaction can be slowed down by the time it takes for the photoinitiators or their cleavage products to diffuse out of the particles. In another preferred embodiment, the photoinitiators are not only embedded in particles but also fixed in lattices or dendrimers. The delay of time of the crosslinking reaction that is achieved by this means corresponds, then, to the time it takes the reactive constituents of the coating formulation, such as reactive monomers or oligomers, for example, to diffuse into the lattices.